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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,521	12/11/2003	Keith P. Bargroff	RFMAGIC.001A	1594
20995	7590	07/05/2006	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP			LE, DINH THANH	
2040 MAIN STREET			ART UNIT	
FOURTEENTH FLOOR			PAPER NUMBER	
IRVINE, CA 92614			2816	

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/735,521

Applicant(s)

BARGROFF ET AL.

Examiner

DINH T. LE

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 51-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 51-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/26/04, 10/15/04, 6/5/06, 5/16/05, 3/23/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 2816

***DETAILED ACTION***

The drawing are objected to in that, i.e., boxes (227, 229a, 229b, 231) in Figure 1 should be labeled as their function. Correction is required.

***Claim Rejections - 35 USC § 112***

Claims 51-77 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 51, the recitation “or” on line 15 is indefinite because it does not positively recites the claimed invention. Also, it is unclear what the “portion” on line 15 and “differential signal path” are and how the recitation “a portion comprises a differential path” on line 15-16 is read on the preferred embodiment or seen on the drawings. The same is true for claim 76.

In claim 52, it is unclear what the “carrier frequency” is, where it comes from and how the channels have this frequency.

In claim 53, the recitation “the content” on line 3 lacks clear antecedent basis. It is unclear what the content is. The same is true for claim 54.

In claim 57, the recitation “two or more band translation devices” is confusing because it is unclear if this is additional “devices” or further recitation of the previously claimed “devices” in claim 51. The same is true for claim 58.

In claim 58, it is unclear how the recitation “two . . . source” on lines 1-2 is read on the preferred embodiment or seen on the drawings. The same is true in claims 59-64.

Art Unit: 2816

In claim 70, the recitation "a signal" is confusing because it is unclear if this is additional "signal" or further recitation "N signals" in claim 51. The same is true for reciting "one variable gain amplifier" on line 3 of claim 72.

In claim 75, it is unclear what the LNB converter is.

The remaining claims are dependent from the above rejected claims and therefore also considered indefinite.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 51-69 and 75-77 are rejected under 35 USC 103 (a) as being unpatentable over Lazaris-Brunner et al (US 6,408,164) in view of Lee et al (US 6,510,185).

As the best construed, Lazaris-Brunner et al discloses in Figures 1-3 a circuit comprising:

- a crosspoint switch (22);
- a plurality of band translation devices (16, 30); and
- local oscillators (14, 26).

Art Unit: 2816

- Wherein one or more channels comprises at least one inherent multiplexed channel, the multiplexed channel operating at a predetermined carrier frequency and comprising the content of two or more channels.
- Wherein the content of the two or more channels comprises digital content, and wherein the multiplexed channel comprises a multiplexed digital channel.
- Wherein at least one of the N signals comprises a plurality of frequency bands.
- Wherein the crosspoint switch (22) and the plurality of band translation devices are included within an integrated circuit.
- Wherein two or more band translation devices are coupled to the same local oscillator source (14).
- Wherein two or more band translation devices are coupled to different variable local oscillator sources (26).
- Wherein the output of each one of the band translation devices is configured to couple to a single output device (20).
- Wherein the outputs of two or more of the band translation devices are coupled together by an adder (24, Figure 3).
- Wherein the output of at least one of the band translation devices is configured to couple to a plurality of output devices.
- Wherein a respective plurality of filters (BPF), each respective filter coupled between a band translation device output and a signal combiner input (24).
- Wherein the plurality of filters are selected from the group consisting of a high pass filter, a lowpass filter or a bandpass filter.

Art Unit: 2816

However, Lazaris-Brunner et al does not disclose that at least a portion of the translation devices comprising a differential channel path.

Nevertheless, Lee et al suggests in figure 12B a mixer circuit (1200B) comprising a plurality different input/output channel paths (LO, OUT) for increasing dynamic range, see lines 50-56, column 3.

It would have been obvious to a person having skill in the art at the time the invention was made to employ the differential input mixer in the circuit of Lazaris-Brunner et al as suggested by Lee et al for the purpose of increasing the dynamic range.

With regard to claim 76, although Brunner et al does not disclose another set of second crosspoint switch and translation devices connected to the inputs of the crosspoint switch (22) for processing signals from the receivers. However, the skilled artisan realizes that more set of crosspoint switch can be connected to the receivers for providing more output signals. Thus, employing a second set of crosspoint switch and a second translation devices as claimed is considered to be a matter of a design expedient for an engineer depending upon a particular application. Lacking of showing any criticality, it would have been obvious to a person having skill in the art at the time the invention was made to employ a second set of crosspoint switch and translation device in the circuit of Lazaris-Brunner et al for the purpose of increasing a number of the output signals.

Claims 70-71 are rejected under 35 USC 103 (a) as being unpatentable over Lazaris-Brunner et al (US 6,408,164) in view of Lee et al (US 6,510,185) and further in view of Razavi et al (US 6,509,777).

Art Unit: 2816

Lazaris-Brunner in view of Lee et al discloses a circuit with all of the limitations of the claimed invention as stated above but does not disclose that the gain of the LNA in the receiver circuit is controllable by a control signal.

Nevertheless, Razavi suggest in Figure 3 a communication circuit comprising a LNA (302) having the gain to be controlled by a control signal (VCONT).

It would have been obvious to a person having skill in the art at the time the invention was made to employ the variable gain LNA in the circuit of Lazaris-Brunner et al as suggested by Razavi for the purpose of adjusting the overall gain of the communication circuit.

#### **Allowable Subject Matter**

Claims 72-74 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. These claims are allowed because the prior art of record fails to suggest the detector as combined in these claims.

#### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DINH T. LE whose telephone number is (571) 272-1745. The examiner can normally be reached on Monday-Friday (8AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY CALLAHAN can be reached at (571) 272-1740.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 2816

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DINH T. LE  
PRIMARY EXAMINER